LATIN AMERICA: EVALUATION OF THE DEMOGRAPHIC SITUATION IN THE PERIOD 1970-1975. COMPARISON OF PREVIOUS ESTIMATES WITH THOSE DERIVED FROM RECENT DATA

CENTRO LATINOAMERICANO DE DEMOGRAFIA

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INDEX

Index of tables

SUMMARY

This document deals with the evaluation of the demographic situation of the Latin American countries estimated for the period around 1973. The evaluation is performed on the basis of recent information from population censuses, demographic surveys and from births and deaths registers, and refers to the quinquennium 1970-1975.

Previous estimates are, in most cases, projected values of fertility and mortality, based on the best estimates that could be elaborated at that time.

At the regional level, the previous and new estimates on mean population, average annual births, average annual deaths and on net growth, are almost equivalent. This similarity at the regional level hides, however, significant differences between observed and assumed trends of fertility, mortality and natural growth in some countries.

RESUMEN

El propósito de este documento es evaluar la situación demográfica de los países de América Latina, estimada para el período en torno a 1973. La evaluación se realiza a la luz de informaciones recientes que proceden de censos de población, encuestas demográficas y de registros de nacimientos y defunciones. La evaluación se formula para el quinquenio 1970-1975.

Las estimaciones previas, con las que se comparan las recientes, son en la mayoría de los casos, valores proyectados de fecundidad y mortalidad que se apoyan en las mejores estimaciones que pudieron elaborarse entonces.

A nivel regional, las estimaciones previas y recientes son casi coincidentes en cuanto a :población media, número medio anual de nacimientos, número medio anual de defunciones y crecimiento neto de la población. Esta coincidencia a nivel regional oculta diferencias significativas de la fecundidad, de la mortalidad y del crecimiento natural de algunos países.

Objectives

Is the population of the Latin American countries changing as forecast by the estimates prepared some years ago? Is the number of births larger or smaller than was anticipated? Is mortality declining at the projected rate? The purpose of this paper is to answer questions such as these.

Some preliminary remarks

Before taking up the analysis of the information, some comments or clarifications are called for to facilitate the interpretation of the data examined further on:

- the comparisons between previous and recent estimates will refer to the period 1970-1975. Although it would, of course, be more interesting to concentrate on what happened in 1975 or to examine the annual trend in the period 1970-1975, it is impossible to do so because of the lack of information that an exercise of that kind would require.
- in order to collect the information analyzed in this paper, notwithstanding the fact that it is not very complete and does not include information for 1975, except in a few cases, CELADE made a systematic effort of requesting information from the statistical offices of the countries. The results were positive in some instance, discouraging in others.
- it has been possible to consider information received by CELADE before 31 March, 1977.
- no information of significance, in terms of importance, quality and timeliness, has been obtained on international migrations for the period under study. For this reason, the analysis will only consider the fertility, mortality and natural increase of the population.

- in the tables the countries are always classified in the same order: those of South America first, followed by the remaining Latin American countries. Within each group the countries are listed in the spanish alphabetical order.

Previous estimates

It is useful to establish at the outset what will be meant by previous estimates, with which the recent data concerning the period 1970-1975 will be compared. Previous estimates will be those appearing in the paper: América Latina: Situación demográfica alrededor de 1973 y perspectivas para el año 2000 (CELADE, Serie A, N° 128) which is a revised (January, 1975) version, of the document submitted to the Latin American Preparatory Meeting of the World Population Conference, held in San José, Costa Rica, in April, 1974. All the data presented under the heading previous estimates are taken from that paper.

It should be borne in mind that the previous estimates are, in the majority of cases, projected values of fertility and mortality, based on the best available estimates, which assume declines in both variables between the period 1965-1970 and 1970-1975. The only exception is fertility in Bolivia, where the hypothesis is one of constant fertility. Consequently, when the observed numbers and the previous estimates coincide, this should be taken to mean that the variables are declining as expected; a smaller number of births or deaths than expected means an acceleration of the anticipated decline, while a larger number may mean either that the decline is smaller than anticipated or that an increase has occurred.

Recent estimates

Recent estimates will mean any information recorded or estimated that has become available after the publication of the above-mentioned paper. Three sources of new data should be distinguished:

a) data from annual registers of births and deaths,

b) data from recent censuses,

c) data from national demographic surveys.

Data from registers

The annual series of births and deaths should be given pride of place because they constitute the source to which one should naturally resort to discover population trends. It would be sufficient to compile the information corresponding to the period 1970-1975 in order to have the recent data for comparison with the previous estimates. As will be seen below, although this approach is what might be expected on the face of it, in the majority of the countries of the region it is impossible because the data of registers are either very deficient, and therefore unsuitable for our purposes here, or unavailable because the compilation of the data is delayed.

Appendix A shows the situation of each country with regard to the two conditions placed on the information from registers, namely, to be of reasonable quality and to be available.

It appears that only seven countries can be considered as having acceptable and available data in relation to births, and again seven in respect of deaths. Of these, only four furnish information both on births and on deaths. In other words, only in these four cases can an estimate of the natural increase be made, on the basis of data from registers, with which to evaluate the previous estimate.

Data from censuses

Fortunately, it has been possible to obtain new information from recent censuses which were unavailable when the previous estimates were prepared. This is the case of four countries (Colombia, Ecuador, Perú and El Salvador) which now have fresh census data for the period 1970-1975. This information is what is compared with the previous estimates.

Data from surveys

Finally, national demographic surveys have been conducted in some countries since 1970: Bolivia, Haití, Honduras and the Dominican Republic. However the results of only two, Bolivia and Honduras, are available. These results are also used in this paper. In the case of the Dominican Republic, information collected by the national fertility survey performed in 1975 has been used.

Examination of the available information

Table 1 presents the recent data which has been gathered. It contains two sections: the first shows data derived from registers of eight countries; in the second, covering seven countries, recent estimates derived from censuses or surveys are compared with the previous ones.

There are good reasons for this division into two sections: the significance of the differences between previous and recent estimates varies between the two sections. The significance of the differences that appear in a comparison between recent data from registers, considered acceptable according to the criteria set forth in Appendix A, and the previous estimates is that they show whether or not the observed trends in fertility, in mortality or in natural increase differ from the anticipated trends. Any significant deviation is taken to mean that the projected values have not represented correctly what has happened. This is the most pertinent analysis for the objectives of this paper.

On the other hand, estimates derived from new census or survey data are compared with previous estimates, the differences have another significance -the new estimates- probably more reliable than the previous ones, provide a better measure of the phenomenon than the earlier one.

Since the distinction between the two causes of differences between previous and recent estimates is important, we shall briefly repeat it:

- In the first case, the difference between the previous and the recent estimates is due to the fact that reality -the recent values- has not followed expectations;
- In the second case, the difference is due not so much to a bigger or smaller change in the variation of fertility, mortality or natural increase than anticipated, but rather to the fact that the new information provides a sounder basis for demographic estimates than the one existing when the projections that led to the previous estimates were elaborated.

Table 1

COUNTRIES WITH RECENT INFORMATION ACCORDING TO SOURCE. ANNUAL BIRTHS. DEATHS AND NATURAL INCREASE IN 1970-1975, ACCORDING TO PREVIOUS AND RECENT ESTIMATES

(Thousands)

Country	Births		Deaths		Natural increase	
	Previous estimate	Recent estimate	Previous estimate	Recent estimate	Previous estimate	Recent estimate
Source: REGISTERS						
Chile	273	247	90	82	183	165
Uruguay	XXX	XXX	28	28	XXX	XXX
Venezuela	411	414	XXX	XXX	XXX	XXX
Costa Rica	62	57	11	11	51	46
Cuba	XXX	XXX	60	52	XXX	XXX
Guatemala	245	239	78	77	167	162
México	2 300	2 398	472	460	1 828	1 938
Panamá	57	53	XXX	XXX	XXX	XXX
Sub-total	3 348	3 408	739	710	2 229	2 311
Source: CENSUSES OR SURVEYS						
Bolivia	223	237	92	92	131	145
Colombia	974	820	211	222	763	598
Ecuador	274	303	62	67	212	236
Perú	586	634	170	204	416	430
El Salvador	161	167	42	43	119	124
Honduras	138	138	41	40	97	98
R. Dominicana	217	206	52	52	165	154
Sub-total	2 573	2 505	670	720	1 903	1 785
Total	5 921	5 913	1 409	1 430	4 132	4 096

XXX/ Means that the information is not reliable according to the criterion established in Appendix A.

In the analysis of the data presented in the first part of the table, derived from registers, the differences must be interpreted according to the first criterion; when examining the data of the second part, it is the second interpretation that is valid.

Both types of difference are equally important in that they show deviations from the values which were considered as the best representation of demographic trends. The new estimates replace this representation and give an idea of what may be occurring in the rest of Latin America, as far as what is happening in the fifteen countries examined may legitimately be extrapolated to the whole region.

Countries with recent data from registers

Table 1 sets forth data on births taken from registers of six countries. In three cases, Chile, Costa Rica and Panamá, fertility has declined more than anticipated. According to the explanation in Appendix A, the decline is considered to be significant if the difference between registered and projected births is over 5 per cent of the projected number. In the above-mentioned three countries the decline is clearly over 5 per cent; the decline of fertility has therefore accelerated. In the other three countries, however, the data from registers do not differ significantly from the forecasts. These cases include Venezuela, Guatemala and México, which are the numerically more important members of the group of six countries and therefore for the group as a whole the number of registered births does not differ significantly from what was anticipated. The figures for each country and for the group of six can be examined in table 1.

In conexion with fertility, the case of Cuba calls for special comment. The number of registered births in Cuba in 1965-1970 was more than 5 per cent smaller than estimated. For this reason, in accordance with the criterion adopted in Appendix A, the register was considered deficient and the cuban figures corresponding to 1970-1975 were not included in table 1. In spite of the limitations of the registers, a study of the data in table A.1 of the Appendix A indicates that a very pronounced decline of fertility, far greater than anticipated, is taking place in Cuba. The annual series of births between 1971-1975 shows declining values: 256 000 in 1971, 193 000 in 1975. Therefore,

Cuba is another country which must be added to the group of those in which the decline of fertility has accelerated.

The data of death registers also refer to six countries. In two of them, Chile and Cuba, the figures show a decline in mortality well above expectations and clearly over the 5 per cent established as a margin for the deviation to be considered significant. In the other four cases -Uruguay, Costa Rica, Guatemala and México- there are no clear differences between the projected and the observed values. In the group of six countries as a whole the difference between anticipated and registered deaths has no significance, amounting to 4 per cent.

Finally, in the four cases where the anticipated and the observed natural increase may be compared it appears that in two of them, Chile and Costa Rica, the registered natural increase is clearly lower than projected; in México it is higher, and in the case of Guatemala the difference between the estimates has no significance. In the group of the four countries as a whole, the difference is likewise of no significance.

The situation of each of the eight countries mentioned above, is briefly analyzed in Appendix B.

Countries with recent data from censuses and surveys

The second part of table 1 sets forth information on the seven countries which belong to this group. In two of them, Colombia and the Dominican Republic, the recent estimate places the fertility level below the previous estimate. In four countries, Bolivia, Ecuador, Perú and El Salvador, the opposite occurs, while in Honduras the two estimates coincide. This is not surprising since the results of the National Demographic Survey were available when the previous estimates were prepared.

The new estimates of mortality are higher than previously in Colombia, Ecuador and Perú, while they practically coincide with the previous ones in the remaining cases.

The new estimate of natural increase is lower than anticipated in Colombia and the Dominican Republic, and higher in the other cases.

Each of the seven countries considered in this group is analyzed separately in Appendix B.

Comments on the data of table 1

When all the information contained in table 1 is added together, the values of annual births estimated previously and recently almost coincide: 5 921 and 5 913 million, respectively. The acceleration of the decline in fertility in Chile, Costa Rica, Panamá and, possibly, in Colombia, is offset by a smaller decline than anticipated in México, and with the higher estimates of fertility, made on sounder bases, in the countries with recent data from censuses and surveys. As a result, in the group of countries considered the number of births in 1970-1975 almost coincided with the projections.

Mortality declined more than anticipated in Chile and Cuba, while the new estimate of mortality is higher in Colombia, Ecuador and Perú. In the group of countries considered, the previous and recent estimates of the annual number of deaths in the five-year period 1970-1975 are: 1 409 and 1 430 million. Again, the two values are very close.

The natural increase in Chile and Costa Rica was lower than anticipated, while in México it was higher. In the group of countries without reliable registers, but with recent data from censuses and surveys, the natural increase was lower than anticipated in Colombia and the Dominican Republic, higher in the other cases. In the group as a whole, with the opposite trends offsetting each other, the previous and recent estimates of the mean annual increase are 4 132 and 4 096 million, respectively, again, two similar values.

The situation of the region as a whole

It seems interesting to present a table with the estimates of mean population and annual movements (births, deaths, migrations) in the period 1970-1975 for all the countries of the region, taking into account the changes arising from the data in table 1 discussed above. In table 2 the existing information is presented, with only some changes in the estimates of the migratory movements (see Appendix C), in the case of the countries not considered so far, because no new data are available. The information for other countries that provide only partial new data is likewise shown.

New data on mean population are presented for the period 1970-1975 for the countries with recent and available census information which has been analyzed.

Data corresponding to the previous estimates at a regional level are presented in the last line of the table. A final summary may be made by comparing them with the sum of the information in the table by countries.

At the regional level, the previous and the recent estimates of the mean population (295 615 and 295 937 million, respectively), of the mean number of annual births (11 019 and 11 013 million, respectively), of the mean number of annual deaths (2 760 and 2 782 million, respectively) and of the net increase of the population (8 158 and 8 080 million, respectively) almost coincide.

This coincidence at the regional level conceals significant differences between observed and anticipated trends in the fertility, mortality and natural increase of some countries, which have been discussed above.

Table 2

LATIN AMERICA: MEAN POPULATION AND MEAN ANNUAL NUMBER OF DEMOGRAPHIC EVENTS BY COUNTRIES IN THE PERIOD 1970-1975

(Thousands)

Country	Mean population	Mean annual number of:				
		Births	Deaths	Natural increase	Net migration	Net increase
Argentina	24 566	535	215	320	7	327
Bolivia	5 095	237	92	145	- 5	140
Brasil	102 467	3 804	899	2 905	-	2 905
Colombia	23 982	820	222	598	- 50	548
Chile	9 811	247	82	165	- 7	158
Ecuador	6 560	303	67	236	- 3	233
Paraguay	2 474	98	22	76	- 7	69
Perú	14 615	634	204	430	-	430
Uruguay	3 033	63	28	35	- 3	32
Venezuela	11 386	414	80	334	40	374
Costa Rica	1 848	57	11	46	-	46
Cuba	9 023	263	52	211	- 20	191
El Salvador	3 862	167	43	124	- 12	112
Guatemala	5 677	239	77	162	-	162
Haití	5 544	233	95	138	- 5	133
Honduras	2 795	138	40	98	-	98
México	54 758	2 398	460	1 938	- 70	1 868
Nicaragua	2 144	104	30	74	- 4	70
Panamá	1 567	53	11	42	- 2	40
R. Dominicana	4 730	206	52	154	- 10	144
Total	295 937	11 013	2 782	8 231	-151	8 080
Previous estimate	295 615	11 019	1 760	8 259	-101	8 158

A P P E N D I X E S

Appendix A

Analysis of the quality and availability of data from registers of births and deaths by countries

The data from registers of births and deaths can be used as representing the real trend in fertility and mortality in the period 1970-1975 if they meet two conditions: they must be of reasonable quality and be available for atleast several years of the period under consideration.

The quinquennium closest to 1970-1975 for which there are both estimates and registered numbers of births and deaths is 1965-1970. This information will be used to establish the countries in which registers can be considered to be of reasonable quality.

The estimates for the quinquennium 1965-1970 which appear in the Tables A.1 and A.2 are taken from the document, América Latina: Situación demográfica alrededor de 1973 y perspectivas para el año 2000, (CELADE, Serie A, N° 128, enero 1975), and are considered by CELADE to be the most reliable estimates that can be given for each country. This does not mean, however, that they are fully reliable in all cases. In some countries they are simply rough estimates, approximations of reality, although nevertheless possible the best that can be prepared.

It will be assumed that the registers of a country are of acceptable quality when the difference between the registered and estimated events, for the period 1965-1970, is less than 5 per cent of the registered value. This seems to be an appropriate criterion, in view of what has just been said about the estimates, and because a difference of 5 per cent does not constitute a very strict condition of completeness of registration.

A country will be considered to possess available data for the period 1970-1975 when information exists for at least three years of the period.

Applying these two criteria, as may be seen from Table A.1 and A.2, it appears that seven countries, Chile, Venezuela, Costa Rica, El Salvador, Guatemala, México and Panamá qualify as having registers of births of acceptable quality and possessing information, while there are seven countries,

namely Chile, Ecuador, Uruguay, Costa Rica, Cuba, Guatemala and México that have acceptable registers of deaths and possess information.

Only these cases, i.e., the countries where the information of registers was available and was considered of acceptable quality for the period 1970-1975, were taken into consideration. They appear in the top part of table 1 in the text. Ecuador and El Salvador, which have acceptable registers only of deaths and of births respectively, and at the same time have results from recent censuses, are included in the second part of Table 1.

Special mention must be made of Argentina, which appears in tables A.1 and A.2 as having acceptable registers of both births and deaths. In this case, however, the recent demographic trends cannot be analized because the latest available information at the national level is for 1970. Since then the information is only partial and does not cover the more thickly populated districts of the country, except for the city of Buenos Aires.

Table A.1

LATIN AMERICA: REGISTERED AND ESTIMATED BIRTHS IN THE PERIOD 1965-1970, REGISTERED BIRTHS BY YEAR BETWEEN 1970-1975, AND REGISTERED OR ESTIMATED BIRTHS IN THE PERIOD 1970-1975

Country	Annual average period 1965-1970			Registered by year						Annual average period 1970-1975
	Registered	Estimated	Estim./Regis.	1970	1971	1972	1973	1974	1975	
	(thousands)			(thousands)						
Argentina	504	504	1.00	545	...	...	...	...	...	545
Bolivia	97	198	2.05	97	85	61	55	46	...	66
Brasil	...	3 378	...	...	...	...	...	4 311	4 247	4 290
Colombia	592	887	1.50	425	446	600	...	...	...	503
Chile	255	268	1.05	238	249	253	252	244	234	247
Ecuador	224	248	1.11	230	244	243	244	245	...	242
Paraguay	63	89	1.41	88	80	81	81	88	...	83
Perú	477	531	1.11	483	492	499	...	...	...	493
Uruguay	54	63	1.16	55	56	56	57	58	...	57
Venezuela	390	389	1.00	393	406	406	405	434	444	414
Costa Rica	61	60	0.98	58	56	57	53	57	...	56
Cuba	240	257	1.07	237	256	248	226	203	193	230
El Salvador	140	143	1.02	141	154	153	156	158	...	154
Guatemala	210	221	1.05	212	230	242	233	...	...	232
Haití	...	219	...	...	...	...	...	...	...	...
Honduras	104	122	1.16	107	117	122	121	126	...	120
México	2 015	1 994	0.99	2 122	2 219	2 332	2 572	2 607	...	2 398
Nicaragua	78	89	1.14	84	78	87	81	90	...	84
Panamá	51	52	1.02	53	55	55	52	51	...	53
R. Dominicana	138	188	1.37	163	162	177	...	...	...	168

Table A.2

LATIN AMERICA: REGISTERED AND ESTIMATED DEATHS IN THE PERIOD 1965-1970, REGISTERED DEATHS BY YEAR BETWEEN 1970-1975, AND REGISTERED OR ESTIMATED DEATHS IN THE PERIOD 1970-1975

Country	Annual average period 1965-1970			Registered by year						Annual average period 1970-1975
	Registered	Estimated	Estim./Regis.	1970	1971	1972	1973	1974	1975	
	(thousands)			(thousands)						
Argentina	207	197	0.95	222	...	...	...	...	...	222
Bolivia	27	86	3.21	25	19	17	14	16	...	17
Brasil	...	845	...	...	...	...	...	804	829	812
Colombia	175	211	1.20	...	...	162	...	...	...	162
Chile	87	90	1.03	83	83	89	83	78	74	82
Ecuador	61	61	1.01	60	64	68	66	64	...	65
Paraguay	11	21	1.88	13	14	13	14	14	...	14
Perú	111	169	1.52	132	118	129	...	...	...	125
Uruguay	26	26	1.00	26	29	28	28	28	...	28
Venezuela	64	78	1.21	68	70	73	76	74	74	73
Costa Rica	11	12	1.05	12	11	11	10	10	10	11
Cuba	53	54	1.03	54	54	49	51	52	50	52
El Salvador	31	42	1.35	35	29	32	32	31	...	31
Guatemala	78	78	1.00	77	75	68	50	...	...	66
Haití	...	97	...	...	...	...	...	...	...	...
Honduras	21	42	2.03	20	20	22	21	19	...	20
México	440	453	1.03	486	458	476	459	433	...	460
Nicaragua	14	29	2.09	16	14	26	15	15	...	17
Panamá	9	11	1.17	10	10	9	9	9	...	9
R. Dominicana	27	50	1.85	25	25	28	...	...	...	26

Appendix B

Information of countries with recent data

This Appendix sets forth recent information of the fifteen countries appearing in table 1 of the text. The countries are grouped, as in that table, in two categories: (a) countries with information derived from registers and (b) countries with new information furnished by censuses or surveys.

The previous information, as has already been mentioned, comes from the document, América Latina: Situación demográfica alrededor de 1973 y perspectivas para el año 2000 and the 17th and 18th issues of the CELADE Demographic Bulletin.

In each case both the recent and the previous data are presented with a brief comment on the comparison between the two.

It is worth recalling here the criterion adopted in Appendix A to establish the significance of a difference between previously estimated data and data derived from registers: the difference is considered significant when it exceeds 5 per cent of the registered value. This criterion is frequently applied as may be seen from the notes accompanying the tables.

(a) Countries with information taken from registers:

Chile

Uruguay

Venezuela

Costa Rica

Cuba

Guatemala

México

Panamá

Country: CHILE

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	9 369	
Mid 1975 (in thousands)	N(75)	10 253	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	9 811	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		71.2	80.7
20-24		187.8	188.7
25-29		182.2	169.3
30-34		132.2	120.3
35-39		101.9	77.0
40-44		47.7	36.2
45-49		7.6	8.4
Total fertility rate	TFR	3.65	3.40
Mean annual number of births (in thousands)	B	273	247
Annual birth rate (per thousand)	b	27.87	25.18
Mortality			
Expectation of life at birth, both sexes	e_o	62.56	64.71
Expectation of life at birth, males		59.53	61.30
Expectation of life at birth, females		65.70	68.29
Mean annual number of deaths (in thousands)	D	90	82
Annual death rate (per thousand)	d	9.16	8.36
Increase			
Natural increase (in thousands)	C	183	165
Annual net migration (in thousands)	I-E	- 7	- 7
Net increase (in thousands)	R	176	158
Annual rate of increase (in thousands)	r	18.04	16.10

Source: Registers of births and deaths.

Comment:
- fertility has clearly declined more than anticipated in the age groups over 25. Below this age there is a small increase, that can perhaps be associated with changes in nuptiality;
- mortality has also declined more than anticipated;
- the net effect of these two trends has been to reduce significantly the rate of natural increase if comparison with the previous estimated value. The recent estimate is 16.10, the previous one 18.04, per thousand annually.

Country: URUGUAY

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	2 955	
Mid 1975 (in thousands)	N(75)	3 111	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	3 033	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		61.3	
20-24		169.3	
25-29		163.8	
30-34		106.4	
35-39		59.3	
40-44		26.4	
45-49		4.0	
Total fertility rate	TFR	2.95	
Mean annual number of births (in thousands)	B	63	
Annual birth rate (per thousand)	b	20.63	
Mortality			
Expectation of life at birth, both sexes	e_o	69.78	
Expectation of life at birth, males		66.88	
Expectation of life at birth, females		72.82	
Mean annual number of deaths (in thousands)	D	28	28
Annual death rate (per thousand)	d	9.26	9.26
Increase			
Natural increase (in thousands)	C	35	
Annual net migration (in thousands)	I-E	-3	
Net increase (in thousands)	R	32	
Annual rate of increase (in thousands)	r	10.28	

Source: Register of deaths.

Comment: - the mortality level previously estimated is the same as that furnished by the data from registers.

Country: CUBA

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	8 565	
Mid 1975 (in thousands)	N(75)	9 481	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	9 023	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		114.1	
20-24		225.0	
25-29		196.7	
30-34		137.2	
35-39		85.7	
40-44		39.2	
45-49		8.8	
Total fertility rate	TFR	4.03	
Mean annual number of births (in thousands)	B	263	
Annual birth rate (per thousand)	b	29.13	
Mortality			
Expectation of life at birth, both sexes	e_o	69.75	
Expectation of life at birth, males		68.05	
Expectation of life at birth, females		71.54	
Mean annual number of deaths (in thousands)	D	60	52
Annual death rate (per thousand)	d	6.60	5.76
Increase			
Natural increase (in thousands)	C	203	
Annual net migration (in thousands)	I-E	-20	
Net increase (in thousands)	R	183	
Annual rate of increase (in thousands)	r	20.31	

Source: Register of deaths. Information is not available on deaths by age.

Comment: - the registered number of deaths is smaller than anticipated.

Country: GUATEMALA

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	5 298	5 272
Mid 1975 (in thousands)	N(75)	6 129	6 082
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	5 714	5 677
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		131.9	144.6
20-24		288.6	277.3
25-29		298.9	255.9
30-34		237.5	218.0
35-39		159.2	177.7
40-44		81.6	92.4
45-49		15.9	19.0
Total fertility rate	TFR	6.07	5.92
Mean annual number of births (in thousands)	B	245	239
Annual birth rate (per thousand)	b	42.82	42.11
Mortality			
Expectation of life at birth, both sexes	e_o	52.93	53.76
Expectation of life at birth, males		52.17	52.78
Expectation of life at birth, females		53.72	54.79
Mean annual number of deaths (in thousands)	D	78	77
Annual death rate (per thousand)	d	13.72	13.58
Increase			
Natural increase (in thousands)	C	167	162
Annual net migration (in thousands)	I-E	-	-
Net increase (in thousands)	R	167	162
Annual rate of increase (in thousands)	r	29.10	28.52

Source: Chackiel, Juan, Guatemala: Evaluación del censo de 1973 y proyección de la población por sexo y edad 1950-2000, CELADE, Serie A, Nº 1021, San José, Costa Rica, 1976.

Comment:
- there is no significant difference between the previous and the recent estimate of the fertility level, although there are apparently changes in the age structure of the rates;
- there is no significant difference between the previous and the recent estimate of the mortality level. Indications that it has declined more than was projected must be viewed with caution, since the difference between the two estimates es very small;
- changes in the structure of the fertility rates by age (rates for young ages have now a lower weight, with the exception of the age group 15-19) are the main reason for the small decline, which is not significant, in the rate of natural increase. It is now estimated at 28.52, and was previously estimated at 29.10, per thousand annually.

Country: MEXICO

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	50 313	
Mid 1975 (in thousands)	N(75)	59 204	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	54 758	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		87.0	99.8
20-24		271.0	290.0
25-29		318.0	321.8
30-34		269.0	260.1
35-39		198.0	217.0
40-44		113.0	114.1
45-49		37.0	38.1
Total fertility rate	TFR	6.46	6.70
Mean annual number of births (in thousands)	B	2 300	2 398
Annual birth rate (per thousand)	b	42.00	43.79
Mortality			
Expectation of life at birth, both sexes	e_o	63.22	63.19
Expectation of life at birth, males		61.33	61.28
Expectation of life at birth, females		65.20	65.19
Mean annual number of deaths (in thousands)	D	472	460
Annual death rate (per thousand)	d	8.62	8.40
Increase			
Natural increase (in thousands)	C	1 828	1 938
Annual net migration (in thousands)	I-E	-50	-70
Net increase (in thousands)	R	1 778	1 868
Annual rate of increase (in thousands)	r	32.47	34.11

Source: Magisters of births and deaths.
IMILA (Investigación de la Migración Internacional de Latinoamericanos) tabulations.

Comment:
- there is no significant difference between the previous and the recent estimate of the fertility level;
- the same may be said about mortality: the registered number of deaths does not differ significantly from the anticipated one, although it is smaller;
- a somewhat higher number of births and a slightly lower number of deaths, in comparison with the anticipated values, determine a larger natural increase than anticipated. The rate of natural increase is now estimated at 34.11 per thousand, with a previous estimate at 32.47, per thousand annually.

Country: PANAMA

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	1 458	
Mid 1975 (in thousands)	N(75)	1 676	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	1 567	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		132.0	127.2
20-24		279.0	261.1
25-29		247.0	232.2
30-34		188.0	163.8
35-39		114.0	111.8
40-44		43.0	40.5
45-49		8.7	7.7
Total fertility rate	TFR	5.06	4.72
Mean annual number of births (in thousands)	B	57	53
Annual birth rate (per thousand)	b	36.08	33.91
Mortality			
Expectation of life at birth, both sexes	e_o	66.53	
Expectation of life at birth, males		64.95	
Expectation of life at birth, females		68.19	
Mean annual number of deaths (in thousands)	D	11	
Annual death rate (per thousand)	d	7.14	
Increase			
Natural increase (in thousands)	C	46	
Annual net migration (in thousands)	I-E	-2	
Net increase (in thousands)	R	44	
Annual rate of increase (in thousands)	r	27.89	

Source: Register of births.

Comment: - there is a clear trend in fertility to decline more than anticipated.

(b) Countries with information from censuses or surveys

Bolivia

Colombia

Ecuador

Perú

El Salvador

Honduras

República Dominicana

Country: BOLIVIA

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	4 780	
Mid 1975 (in thousands)	N(75)	5 410	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	5 095	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		109.5	77.0
20-24		291.5	254.0
25-29		300.1	356.0
30-34		244.8	300.0
35-39		180.8	215.0
40-44		80.0	103.0
45-49		23.4	57.0
Total fertility rate	TFR	6.15	6.81
Mean annual number of births (in thousands)	B	223	237
Annual birth rate (per thousand)	b	43.72	46.60
Mortality			
Expectation of life at birth, both sexes	e_o	46.75	48.21
Expectation of life at birth, males		45.67	45.52
Expectation of life at birth, females		47.88	51.03
Mean annual number of deaths (in thousands)	D	92	92
Annual death rate (per thousand)	d	17.96	17.96
Increase			
Natural increase (in thousands)	C	131	145
Annual net migration (in thousands)	I-E	-5	-5
Net increase (in thousands)	R	126	140
Annual rate of increase (in thousands)	r	24.74	27.50

Source: Somoza, Jorge, L., Encuesta Demográfica Nacional de Bolivia. Informe sobre aspectos demográficos. Ministerio de Planeamiento y Coordinación de la Presidencia de la República. Instituto Nacional de Estadística, La Paz and CELADE. La Paz, Bolivia, June, 1976.

Comment:
- the recent estimate of the level of fertility is higher than the previous one. The structure of the fertility rates by age is different: fertility is now estimated to be higher in later age groups;
- male mortality es now estimated at almost the same level than before, while the recent estimate of female mortality is lower than the previous one. The differences, however, are not of great importance since the total number of deaths estimated previously coincides with the recent estimate;
- the rate of natural increase, as a consequence of the revision in the estimate of fertility, is now 27.50, instead of 24.74 per thousand annually.

Country: COLOMBIA

Demographic indicator		Symbol	Previous estimate	Recent estimate
Population				
Mid 1970 (in thousands)		N(70)	22 075	
Mid 1975 (in thousands)		N(75)	25 890	
Mean population for the period 1970-1975 (in thousands)		$\bar{N}$	23 982	
Fertility				
Annual fertility rates by age (per thousand)		${}_5f_x$		
Age groups:	15-19		83.0	92.0
	20-24		283.2	240.0
	25-29		324.7	230.0
	30-34		229.6	191.0
	35-39		173.6	143.0
	40-44		61.7	69.0
	45-49		19.8	20.0
Total fertility rate		TFR	5.88	4.92
Mean annual number of births (in thousands)		B	974	820
Annual birth rate (per thousand)		b	40.61	34.19
Mortality				
Expectation of life at birth, both sexes		e_o	60.91	59.81
Expectation of life at birth, males			59.20	58.46
Expectation of life at birth, females			62.70	61.24
Mean annual number of deaths (in thousands)		D	211	222
Annual death rate (per thousand)		d	8.79	9.26
Increase				
Natural increase (in thousands)		C	763	598
Annual net migration (in thousands)		I-E	-	-50
Net increase (in thousands)		R	763	548
Annual rate of increase (in thousands)		r	31.82	22.85

Source: XIV Censo Nacional de Población y III de Vivienda, 1973 (sample) and IMILA tabulations corresponding to censuses of Venezuela and the United States of 1971 and 1970, respectively.

Preliminary results of a study presently underway in CELADE.

Comment:
- the recent estimate of the fertility level is clearly lower than the previous one;
- the new estimate of mortality is slightly higher than previously anticipated;
- the lower fertility and the assumed emigration determine a rate of natural increase lower than the previous estimate 22.85, instead of 31.82, per thousand annually.

Country: ECUADOR

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	6 031	
Mid 1975 (in thousands)	N(75)	7 090	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	6 560	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		92.2	105.0
20-24		273.8	284.0
25-29		307.5	311.0
30-34		267.4	275.0
35-39		192.0	236.0
40-44		101.4	151.0
45-49		23.1	78.0
Total fertility rate	TFR	6.29	7.20
Mean annual number of births (in thousands)	B	274	303
Annual birth rate (per thousand)	b	41.76	46.19
Mortality			
Expectation of life at birth, both sexes	e_o	59.63	59.72
Expectation of life at birth, males		58.16	57.90
Expectation of life at birth, females		61.17	61.49
Mean annual number of deaths (in thousands)	D	62	67
Annual death rate (per thousand)	d	9.47	10.21
Increase			
Natural increase (in thousands)	C	212	236
Annual net migration (in thousands)	I-E	-	-3
Net increase (in thousands)	R	212	233
Annual rate of increase (in thousands)	r	32.29	35.52

Source: Censo Nacional de Población de 1974. IMILA Tabulations.

Preliminary results of a study underway in CELADE.

Comment:
- fertility rates for all ages, are now estimated at a higher level than before;
- the previous and recent estimates of mortality almost coincide. The number of annual deaths estimated is now slightly higher than before;
- emigration running at three thousand persons per year is assumed in recent estimate;
- the differences in the estimates of fertility and mortality, in spite of the hypothesis on emigration, determine a rate of natural increase which is clearly higher than before: 35.52, instead of 32.29, per thousand annually.

Country: PERU

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	13 248	13 541
Mid 1975 (in thousands)	N(75)	15 326	15 689
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	14 287	14 615
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		108.8	88.0
20-24		275.4	258.0
25-29		276.2	304.0
30-34		225.9	278.0
35-39		164.5	221.0
40-44		88.2	114.0
45-49		20.1	59.0
Total fertility rate	TFR	5.80	6.61
Mean annual number of births (in thousands)	B	586	634
Annual birth rate (per thousand)	b	41.02	43.35
Mortality			
Expectation of life at birth, both sexes	e_o	55.65	54.55
Expectation of life at birth, males		53.89	53.25
Expectation of life at birth, females		57.50	55.91
Mean annual number of deaths (in thousands)	D	170	204
Annual death rate (per thousand)	d	11.92	13.95
Increase			
Natural increase (in thousands)	C	416	430
Annual net migration (in thousands)	I-E	-	-
Net increase (in thousands)	R	416	430
Annual rate of increase (in thousands)	r	29.10	29.39

Source: Censo Nacional de Población, 1972.

Proyección de población por sexo y grupos de edades, 1950-2000. Boletín Demográfico Nº 17, CELADE, Santiago, January, 1976.

Comment:
- the recent estimate of the level of fertility is clearly higher than the previous estimate;
- mortality is also estimated at a higher level than before;
- the net effect of the changes in the estimates of fertility and mortality on the rate of natural increase is very small: It is now estimated at 29.39, as against 29.10 per thousand annually.

Country: EL SALVADOR

Demographic indicator		Symbol	Previous estimate	Recent estimate
Population				
Mid 1970 (in thousands)		N(70)	3 516	3 582
Mid 1975 (in thousands)		N(75)	4 108	4 143
Mean population for the period 1970-1975 (in thousands)		$\bar{N}$	3 812	3 862
Fertility				
Annual fertility rates by age (per thousand)		${}_5f_x$		
Age groups:	15-19		125.2	148.9
	20-24		307.9	301.0
	25-29		302.3	300.6
	30-34		245.6	251.7
	35-39		176.0	163.1
	40-44		66.1	85.3
	45-49		15.1	16.3
Total fertility rate		TFR	6.19	6.33
Mean annual number of births (in thousands)		B	161	167
Annual birth rate (per thousand)		b	42.17	43.19
Mortality				
Expectation of life at birth, both sexes		e_o	57.83	59.07
Expectation of life at birth, males			56.04	57.07
Expectation of life at birth, females			59.71	61.18
Mean annual number of deaths (in thousands)		D	42	43
Annual death rate (per thousand)		d	11.09	11.06
Increase				
Natural increase (in thousands)		C	119	124
Annual net migration (in thousands)		I-E	-	-12
Net increase (in thousands)		R	119	112
Annual rate of increase (in thousands)		r	31.08	29.50

Source: Alens, Alex, La población de El Salvador por sexo y edad en el período 1950-2000. Principales indicadores demográficos. CONAPLAN, Dirección General de Estadística y Censos, El Salvador, 1976.

Comment:
- there is no clear trend in the differences of level and structure of fertility. The recent estimate of the annual number of births is slightly higher than the previous estimate;
- mortality seems to have declined more than projected, although this is offset by the increase in the estimated population and changes in the structure of the rates by age, so that there is no significant alteration in the estimated annual number of deaths;
- the revised rate of natural increase, as a consequence of the introduction of a hypothesis of net emigration, is lower than the previous one: 29.50 instead of 31.08 per thousand annually.

Country: HONDURAS

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	2 553	
Mid 1975 (in thousands)	N(75)	3 037	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	2 795	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		159.2	170.7
20-24		309.9	316.5
25-29		336.9	339.2
30-34		295.0	307.0
35-39		217.1	221.3
40-44		120.3	126.7
45-49		16.8	17.7
Total fertility rate	TFR	7.28	7.50
Mean annual number of births (in thousands)	B	138	138
Annual birth rate (per thousand)	b	49.26	49.23
Mortality			
Expectation of life at birth, both sexes	e_o	53.49	53.12
Expectation of life at birth, males		52.06	50.91
Expectation of life at birth, females		55.00	55.53
Mean annual number of deaths (in thousands)	D	41	40
Annual death rate (per thousand)	d	14.57	14.16
Increase			
Natural increase (in thousands)	C	97	98
Annual net migration (in thousands)	I-E	-	-
Net increase (in thousands)	R	97	98
Annual rate of increase (in thousands)	r	34.69	35.07

Source: Camise, Zulma: "Fecundidad y Nupcialidad", Encuesta Demográfica Nacional de Honduras, Fascículo III, Dirección General de Estadística y Censos de Honduras, CELADE, May, 1975.

Ortega, Antonio y Rincón, Manuel, "Mortalidad", Encuesta Demográfica Nacional de Honduras, Fascículo IV, August, 1975;

Comment:
- the recent estimate of fertility almost coincides, in the level and in the structure of the rates by age, with the previous one,
- male mortality seems to be somewhat higher, and female mortality somewhat lower, than the previous estimates;
- as a result of these differences, the rate of natural increase is now estimated at 35.07 instead of 34.69 per thousand annually.

Country: REPUBLICA DOMINICANA

Demographic indicator	Symbol	Previous estimate	Recent estimate
Population			
Mid 1970 (in thousands)	N(70)	4 343	
Mid 1975 (in thousands)	N(75)	5 118	
Mean population for the period 1970-1975 (in thousands)	$\bar{N}$	4 730	
Fertility			
Annual fertility rates by age (per thousand)	${}_5f_x$		
Age groups: 15-19		124.5	107.9
20-24		302.5	305.7
25-29		325.0	323.9
30-34		290.5	258.7
35-39		218.5	207.7
40-44		98.5	77.3
45-49		25.0	21.4
Total fertility rate	TFR	6.92	6.51
Mean annual number of births (in thousands)	B	217	206
Annual birth rate (per thousand)	b	45.84	43.55
Mortality			
Expectation of life at birth, both sexes	e_o	57.76	58.83
Expectation of life at birth, males		55.93	57.45
Expectation of life at birth, females		59.68	60.28
Mean annual number of deaths (in thousands)	D	52	52
Annual death rate (per thousand)	d	10.96	10.96
Increase			
Natural increase (in thousands)	C	165	154
Annual net migration (in thousands)	I-E	-10	-10
Net increase (in thousands)	R	155	144
Annual rate of increase (in thousands)	r	32.77	30.44

Source: García, Agustín, República Dominicana: Estudio de la evolución demográfica en el período 1950-1970 y proyecciones de la población total, período 1970-2000. CELADE, Serie AS, N° 19, San José, Costa Rica.

IMILA tabulations.

Bartlema, Jan, La fecundidad en la República Dominicana, 1960-1975, calculada de los datos de la encuesta nacional de fecundidad. Unpublished, CELADE, December, 1976.

Comment:
- the recent estimate of the level of fertility is lower than the previous estimate;
- though the new estimate of mortality is sligh lower than the previous one, the difference is so small that it is not reflected in the annual number of deaths, estimated at 52,000;
- the lower fertility reduces the estimated value of the annual increase. The rate of natural increase is now estimated at 30.44 per thousand annually as against 32.77.

Appendix C

International migration

The existing estimates of international migration in the countries of the region have a very poor statistical basis: there is no complete registration of annual movements and the information collected by population censuses, on persons born in Latin American countries, is only partially divulged.

We shall illustrate the situation with the example of Colombia, which shows the rough of the only analysis we are in a position to carry out.

The best available data on persons born in Colombia who have emigrated are given by the censuses of Venezuela (1971) and the United States (1970). The census information from other countries either shows very small numbers of people born in Colombia, or simply does not register them.

The Venezuela censuses show that between 1961 and 1971 the population born in Colombia rose from 88,357 to 180,144. In 1970, there were 61,466 persons born in Colombia in the United States. In this case it is also known that of these, 33,004 arrived in the United States between 1965 and 1970 and 16,522 between 1960 and 1965.

With this information alone, which shows a rising trend in migration in recent years, and taking into account that persons born in Colombia and enumerated in other countries may not declare correctly their country of origin (if their presence in the country in which they are enumerated is ilegal), it is estimated that the emigration of Colombians in the period 1970-1975 amounted to 50,000 per year. With the same arbitrariness it is assumed, for the sake of consistency, that 40,000 persons enter Venezuela annually (the majority of them, presumably, Colombians).

The estimates of international migration which appear in the document for any country of the region have a statistical basis as weak as that used in the case of Colombia.

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